

10/537897

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WO 2004/058980

1/33

SEQUENCE LISTING

<110> CropDesign N.V.

<120> Plants having modified growth characteristics and a method for  
making the same

<130> CD-070-PCT

<160> 50

<170> PatentIn version 3.1

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<211> 692

<212> DNA

<213> Arabidopsis thaliana

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Lys Gly Lys Arg Ser Lys Arg Ser Arg Ser Asp Phe His His Gln Asn		
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Leu Thr Glu Glu Glu Tyr Leu Ala Phe Cys Leu Met Leu Leu Ala Arg		
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Asp Asn Arg Gln Pro Pro Pro Pro Ala Val Glu Lys Leu Ser Tyr			
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Lys Cys Ser Val Cys Asp Lys Thr Phe Ser Ser Tyr Gln Ala Leu Gly		
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Gly Asn Asn Asn Ile Asn Thr Ser Ser Val Ser Asn Ser Glu Gly Ala  
165 170 175

Gly Ser Thr Ser His Val Ser Ser His Arg Gly Phe Asp Leu Asn  
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Ile Pro Pro Ile Pro Glu Phe Ser Met Val Asn Gly Asp Asp Glu Val  
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<223> Xaa can be any amino acid

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Lys Arg Ser Lys Arg Thr Arg Leu Asp Ser Pro His Thr Glu Glu Glu						
35	40	45				
Tyr Leu Ala Phe Cys Leu Ile Met Leu Ala Arg Gly Arg Val Ala Ser						
50	55	60				
Ala Asn Arg Arg Asp Ser Gln Ser Ser Ile Gln Ile Gln Pro Glu Ala						
65	70	75	80			
Thr Thr Ser Ala Thr Lys Val Ser Tyr Lys Cys Ser Val Cys Asp Lys						
85	90	95				
Ala Phe Ser Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His Arg						
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Lys Leu Ala Gly Gly Glu Asp Gln Ser Thr Ser Phe Ala Thr Thr Asn						
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His Glu Cys Ser Ile Cys His Lys Ser Phe Pro Thr Gly Gln Ala Leu						
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Phe Phe Ile Ser Gly Asp Asp Glu Val Glu Ser Pro His Pro Ala Lys  
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Arg Ser Arg Asp His Pro Ser Glu Glu Glu Tyr Leu Ala Leu Cys Leu  
35 40 45

Ile Met Leu Ala Arg Gly Gly Thr Thr Thr Val Asn Asn Arg His Val  
50 55 60

Ser Pro Pro Pro Leu Gln Pro Gln Pro Gln Pro Thr Pro Asp Pro Ser  
65 70 75 80

Thr Lys Leu Ser Tyr Lys Cys Ser Val Cys Asp Lys Ser Phe Pro Ser  
85 90 95

Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His Arg Lys Leu Ala Gly  
100 105 110

Ala Ala Glu Asp Gln Pro Pro Ser Thr Thr Thr Ser Ser Ala Ala Ala

115

120

125

Thr Ser Ser Ala Ser Gly Gly Lys Ala His Glu Cys Ser Ile Cys His  
 130 135 140

Lys Ser Phe Pro Thr Gly Gln Ala Leu Gly Gly His Lys Arg Cys His  
 145 150 155 160

Tyr Glu Gly Asn Gly Asn Asn Asn Ser Asn Ser Val Val  
 165 170 175

Thr Val Ala Ser Glu Gly Val Gly Ser Thr His Thr Val Ser His Gly  
 180 185 190

His His Arg Asp Phe Asp Leu Asn Ile Pro Ala Phe Pro Asp Phe Ser  
 195 200 205

Thr Lys Val Gly Glu Asp Glu Val Glu Ser Pro His Pro Val Met Lys  
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Lys Pro Arg Leu Phe Val Ile Pro Lys Ile Glu Ile Pro Gln Phe Gln  
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&lt;212&gt; DNA

<213> *Medicago sativa*

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&lt;211&gt; 235

&lt;212&gt; PRT

<213> *Medicago sativa*

&lt;400&gt; 15

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20	25	30

Gly Lys Arg Ser Lys Arg Ser Arg Met Asp Gln Ser Ser Cys Thr Glu  
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 Glu Glu Tyr Leu Ala Leu Cys Leu Ile Met Leu Ala Arg Ser Gly Asn  
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 Asn Asn Asp Lys Lys Ser Asp Ser Val Ala Thr Pro Leu Thr Thr Val  
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 Lys Leu Ser His Lys Cys Ser Val Cys Asn Lys Ala Phe Ser Ser Tyr  
 85 90 95  
 Gln Ala Leu Gly Gly His Lys Ala Ser His Arg Lys Ala Val Met Ser  
 100 105 110  
 Ala Thr Thr Ala Glu Asp Gln Ile Thr Thr Thr Ser Ser Ala Val Thr  
 115 120 125  
 Thr Ser Ser Ala Ser Asn Gly Lys Asn Lys Thr His Glu Cys Ser Ile  
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 Cys His Lys Ser Phe Pro Thr Gly Gln Ala Leu Gly Gly His Lys Arg  
 145 150 155 160  
 Cys His Tyr Glu Gly Ser Val Gly Ala Gly Ala Gly Ala Gly Ser Asn  
 165 170 175  
 Ala Val Thr Ala Ser Glu Gly Val Gly Leu Ser His Ser His His Arg  
 180 185 190  
 Asp Phe Asp Leu Asn Leu Pro Ala Phe Pro Asp Phe Ser Lys Lys Phe  
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Thr Gly Thr Arg Thr Gly Leu Thr Asp Ala Thr Thr Ser Gln Gln Pro	
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Ala Asp Lys Lys Thr Ala Glu Leu Pro Pro Val His Lys Lys Glu Val	
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Ala Thr Glu Gln Ala Glu Gln Ser Tyr Lys Cys Ser Val Cys Asp Lys	
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Ala Phe Ser Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His Arg	
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Lys Thr Thr Thr Ala Thr Ala Ala Ser Asp Asp Asn Asn Pro Ser	
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Thr Ser Thr Ser Thr Gly Ala Val Asn Ile Ser Ala Leu Asn Pro Thr	
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Gly Arg Ser His Val Cys Ser Ile Cys His Lys Ala Phe Pro Thr Gly	
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Gln Ala Leu Gly Gly His Lys Arg Arg His Tyr Glu Gly Lys Leu Gly	
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Gly Asn Ser Arg Asp Leu Gly Gly Gly Gly Gly His Ser Gly	
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Ser Val Leu Thr Thr Ser Asp Gly Gly Ala Ser Thr His Thr Leu Arg	
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Asp Phe Asp Leu Asn Met Pro Ala Ser Pro Glu Leu Gln Leu Gly Leu	
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<212> PRT

<213> Oryza sativa

<400> 19

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Ser Ser Ala Thr Ser Gly Glu Glu Gly Gly His Leu Pro Gln Gly Trp  
 35 40 45

Ala Lys Arg Lys Arg Ser Arg Arg Gln Arg Ser Glu Glu Glu Asn Leu  
 50 55 60

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 Thr Gly Gln Ala Leu Gly Gly His Lys Arg Lys His Tyr Asp Gly Gly  
 180 185 190  
 Val Gly Ala Gly Ala Gly Ala Ser Ser Thr Glu Leu Leu Ala Thr Val  
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 210 215 220  
 Arg Ala Phe Asp Leu Asn Leu Pro Ala Val Pro Glu Phe Val Trp Arg  
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 gtggggtcca ctattagtca tcaccgtgac tttgacttga atattcccg  
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<210> 21  
<211> 253  
<212> PRT  
<213> Petunia x hybrida

<400> 21  
Met Ala Leu Glu Ala Leu Asn Ser Pro Thr Thr Thr Pro Pro Ser  
1 5 10 15

Phe Gln Phe Glu Asn Asn Gly Leu Lys Tyr Leu Glu Ser Trp Thr Lys  
20 25 30

Gly Lys Arg Ser Lys Arg Gln Arg Ser Met Glu Arg Gln Cys Thr Glu  
35 40 45

Glu Glu Tyr Leu Ala Leu Cys Leu Ile Met Leu Ala Arg Ser Asp Gly  
50 55 60

Ser Val Asn Asn Ser Arg Ser Leu Pro Pro Pro Leu Pro Pro Ser  
65 70 75 80

Val Pro Val Thr Ser Gln Ile Asn Ala Thr Leu Leu Glu Gln Lys Asn  
85 90 95

Leu Tyr Lys Cys Ser Val Cys Gly Lys Gly Phe Gly Ser Tyr Gln Ala  
100 105 110

Leu Gly Gly His Lys Ala Ser His Arg Lys Leu Val Ser Met Gly Gly  
115 120 125

Asp Glu Gln Ser Thr Thr Ser Thr Thr Thr Asn Val Thr Gly Thr Ser  
130 135 140

Ser Ala Asn Val Asn Gly Asn Gly Arg Thr His Glu Cys Ser Ile Cys  
145 150 155 160

His Lys Cys Phe Pro Thr Gly Gln Ala Leu Gly Gly His Lys Arg Cys  
165 170 175

His Tyr Asp Gly Gly Asn Gly Asn Gly Ser Val Ser Val Gly  
180 185 190

Val Thr Ser Ser Glu Gly Val Gly Ser Thr Ile Ser His His Arg Asp  
195 200 205

Phe Asp Leu Asn Ile Pro Ala Leu Pro Glu Phe Trp Pro Gly Phe Gly  
210 215 220

Ser Gly Glu Asp Glu Val Glu Ser Pro His Pro Ala Lys Lys Ser Arg  
225 230 235 240

Leu Ser Leu Pro Pro Lys Leu Glu Leu Phe Lys Gly Leu  
245 250

<210> 22  
<211> 786  
<212> DNA  
<213> Triticum aestivum

<400> 22  
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cagggggtggg ccaagaggaa gcgatcgccc cgccacgcgt ccgaggagga gaacctcgcg 180  
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gccgaggccgg ccacgtcgcc caccgcgcgg tcctccgacg gcgcgaccaa cagactccac 480  
agggtctcca tctgcaaaa ggagttcccg actgggcagg cgctcgccgg gcacaagagg 540  
aagcactacg acggaggcgt gggcgccggc gcctcgctga ccgagcttct ggccgcggcg 600  
gccgcccagt ctgaggtggg gagcaccggc aacggagct ccgcccggccg ggcccttcgac 660  
ctgaacattc cggccgtgcc ggagttcggt tggaggccgt gcgcacaaggg caagatgatg 720  
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gcttga 786

<210> 23  
<211> 261  
<212> PRT  
<213> Triticum aestivum

<400> 23  
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His Gln Leu Asp Val Glu Ala Ala Ala Val Ser Ser Ala Thr Ser  
20 25 30  
Gly Glu Glu Ser Gly His Val Leu Gln Gly Trp Ala Lys Arg Lys Arg  
35 40 45  
Ser Arg Arg Gln Arg Ser Glu Glu Glu Asn Leu Ala Leu Cys Leu Leu  
50 55 60  
Met Leu Ser Arg Gly Gly Lys Gln Arg Val Gln Ala Pro Gln Pro Glu  
65 70 75 80  
Ser Phe Ala Ala Pro Val Pro Ala Glu Phe Lys Cys Ser Val Cys Gly  
85 90 95  
Lys Ser Phe Ser Ser Tyr Gln Ala Leu Gly Gly His Lys Thr Ser His  
100 105 110  
Arg Val Lys Gln Pro Ser Pro Pro Ser Asp Ala Ala Ala Pro Leu  
115 120 125  
Val Ala Leu Pro Ala Val Ala Ala Ile Leu Pro Ser Ala Glu Pro Ala  
130 135 140  
Thr Ser Ser Thr Ala Ala Ser Ser Asp Gly Ala Thr Asn Arg Val His  
145 150 155 160  
Arg Cys Ser Ile Cys Gln Lys Glu Phe Pro Thr Gly Gln Ala Leu Gly

165

170

175

Gly His Lys Arg Lys His Tyr Asp Gly Gly Val Gly Ala Ala Ala Ser  
 180 185 190

Ser Thr Glu Leu Leu Ala Ala Ala Ala Glu Ser Glu Val Gly Ser  
 195 200 205

Thr Gly Asn Gly Ser Ser Ala Ala Arg Ala Phe Asp Leu Asn Ile Pro  
 210 215 220

Ala Val Pro Glu Phe Val Trp Arg Pro Cys Ala Lys Gly Lys Met Met  
 225 230 235 240

Trp Glu Asp Asp Glu Glu Val Gln Ser Pro Leu Ala Phe Lys Lys Pro  
 245 250 255

Arg Leu Leu Thr Ala  
 260

<210> 24

<211> 1026

<212> DNA

<213> Capsicum annum

<400> 24

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accgtttcaa tttgagacg acggccaaca gtttcgatata	atcgaaaaact ggaggaagg	180
aaagagatct aaaaggtcac gcagcatgga gcaccacgc	actgaggaag aataacttagc	240
gctttgttg atcatgctt cacgtacgg tggctccgtt	aatcatcaac gatctctacc	300
accggccgct ccggtgatga aactgcacgc gccgtcgta	tcatcgccgg cggaggagga	360
gaaggagaag atggtgtata agtgttcggt ttgtggtaa	ggattttgggt cttatcaagc	420
tttaggtgga cacaagacta gtcacccggaa actcgatccc	ggcggagatg atcagtcaac	480
tacctccaca accactaacg caacccggaa aacaacctcc	gttaacggca acggcaacag	540
aagtggaaagg actcacgagt gttcgatttg tcacaagtgt	tttcccacty gacaagctt	600
aggtggacac aaaaggtgtc actacgacgg cggtatcggt	aacggaaacgc ctaacagtgg	660
cgttagtgct agcgttggag tgacgtcatc ggagggtgtg	gggtccacag tcagtccacg	720
ggatttcgac ttgaacatc cggcggtgcc ggaattctgg	ctgggattttg gttccggcga	780
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tgaattattt caacattaat gggatttga ttgttaggat	ttactatttt ggtagacaaa	900
attatactat gtaagttta attttcatg tgggtggag caaaatttt	aattttttgt	960
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<210> 25

<211> 261

<212> PRT

<213> Capsicum annum

<400> 25

Met Ala Leu Glu Ala Leu Asn Ser Pro Thr Gly	Thr Pro Thr Pro Pro
1 5	10 15

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20 25	30

Trp Arg Lys Gly Lys Arg Ser Lys Arg Ser Arg Ser Met Glu His Gln

35

40

45

Pro Thr Glu Glu Glu Tyr Leu Ala Leu Cys Leu Ile Met Leu Ala Arg  
50 55 60

Ser Gly Gly Ser Val Asn His Gln Arg Ser Leu Pro Pro Pro Ala Pro  
65 70 75 80

Val Met Lys Leu His Ala Pro Ser Ser Ser Ser Ala Ala Glu Glu Glu  
85 90 95

Lys Glu Lys Met Val Tyr Lys Cys Ser Val Cys Gly Lys Gly Phe Gly  
 100 105 110

Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His Arg Lys Leu Val  
 115 120 125

Pro Gly Gly Asp Asp Gln Ser Thr Thr Ser Thr Thr Thr Asn Ala Thr  
130 135 140

Gly Thr Thr Ser Val Asn Gly Asn Gly Asn Arg Ser Gly Arg Thr  
145 150 155 160

His Glu Cys Ser Ile Cys His Lys Cys Phe Pro Thr Gly Gln Ala Leu  
165 170 175

Gly Gly His Lys Arg Cys His Tyr Asp Gly Gly Ile Gly Asn Gly Asn  
                  180                   185                   190

Ala Asn Ser Gly Val Ser Ala Ser Val Gly Val Thr Ser Ser Glu Gly  
195 200 205

Val Gly Ser Thr Val Ser His Arg Asp Phe Asp Leu Asn Ile Pro Ala  
210 215 220

Leu Pro Glu Phe Trp Leu Gly Phe Gly Ser Gly Glu Asp Glu Val Glu  
225 230 235 240

Ser Pro His Pro Ala Lys Lys Ser Arg Leu Cys Leu Pro Pro Lys Tyr  
245 250 255

Glu Leu Phe Gln His  
260

<210> 26

<211> 1068

<212> DNA

<213> *Arabidopsis thaliana*

<400> 26

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tggccctcga	agcgtatgaac	actccaacct	cttctttcac	caagaatcgaa	acgaaaagaag	180
atttgtatgg	cgcaggccgtt	ttcattgagc	cgtggcttaa	acgcaaaccgc	tccaaatgc	240
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agaatcaaga	tcttacggaa	gaagagtatc	tcgctttag	tctcctcatg	ctcgctaaag	360
atcaaccgctc	gcaaaacgcga	tttcatcaac	agtcgcaatc	gttaacgccc	ccgcccagaat	420
caaagaacct	tccgtacaag	tgttaacgtt	gtgaaaaagc	gttcccttcc	tatcaggctt	480

taggcggtca	caaagcaagt	caccgaatca	aaccaccaac	cgtaatctca	acaaccgcgcg	540										
atgattcaac	agctccgacc	atctccatcg	tcgcccggaga	aaaacatccg	attgctgcct	600										
ccggaaagat	ccacgagtgt	tcaatctgtc	ataaaagtgtt	tccgacgggt	caagctttag	660										
gcggtcacaa	acgttgtcac	tacgaaggca	acctccggcg	cgaggagga	ggaggaagca	720										
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gattcatcga	tctaaaccta	ccggcggtac	ctgaacttag	ccttcatcac	aatccaatcg	840										
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accaagtcat	caagaaagaa	gatttatctt	taaaaatcta	atactcgact	attaattctt	960										
gtgtgatttt	tttcgttaca	accatagtt	cattttcatt	tttttagtta	caaattttta	1020										
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<210> 27																
<211> 273																
<212> PRT																
<213> Arabidopsis thaliana																
<400> 27																
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Glu	Thr	Lys	Glu	Asp	Leu	Met	Asn	Asp	Ala	Val	Phe	Ile	Glu	Pro	Trp	
					20					25					30	
Leu	Lys	Arg	Lys	Arg	Ser	Lys	Arg	Gln	Arg	Ser	His	Ser	Pro	Ser	Ser	
					35			40			45					
Ser	Ser	Ser	Ser	Pro	Pro	Arg	Ser	Arg	Pro	Lys	Ser	Gln	Asn	Gln	Asp	
					50			55			60					
Leu	Thr	Glu	Glu	Glu	Tyr	Leu	Ala	Leu	Cys	Leu	Leu	Met	Leu	Ala	Lys	
					65			70			75				80	
Asp	Gln	Pro	Ser	Gln	Thr	Arg	Phe	His	Gln	Gln	Ser	Gln	Ser	Leu	Thr	
					85			90			95					
Pro	Pro	Pro	Glu	Ser	Lys	Asn	Leu	Pro	Tyr	Lys	Cys	Asn	Val	Cys	Glu	
					100			105			110					
Lys	Ala	Phe	Pro	Ser	Tyr	Gln	Ala	Leu	Gly	Gly	His	Lys	Ala	Ser	His	
					115			120			125					
Arg	Ile	Lys	Pro	Pro	Thr	Val	Ile	Ser	Thr	Thr	Ala	Asp	Asp	Ser	Thr	
					130			135			140					
Ala	Pro	Thr	Ile	Ser	Ile	Val	Ala	Gly	Glu	Lys	His	Pro	Ile	Ala	Ala	
					145			150			155				160	
Ser	Gly	Lys	Ile	His	Glu	Cys	Ser	Ile	Cys	His	Lys	Val	Phe	Pro	Thr	
					165			170			175					
Gly	Gln	Ala	Leu	Gly	Gly	His	Lys	Arg	Cys	His	Tyr	Glu	Gly	Asn	Leu	
					180			185			190					
Gly	Gly	Gly	Gly	Gly	Gly	Ser	Lys	Ser	Ile	Ser	His	Ser	Gly	Ser		
					195			200			205					
Val	Ser	Ser	Thr	Val	Ser	Glu	Glu	Arg	Ser	His	Arg	Gly	Phe	Ile	Asp	
					210			215			220					

Leu Asn Leu Pro Ala Leu Pro Glu Leu Ser Leu His His Asn Pro Ile  
 225                    230                    235                    240

Val Asp Glu Glu Ile Leu Ser Pro Leu Thr Gly Lys Lys Pro Leu Leu  
 245                    250                    255

Leu Thr Asp His Asp Gln Val Ile Lys Lys Glu Asp Leu Ser Leu Lys  
 260                    265                    270

Ile

<210> 28

<211> 976

<212> DNA

<213> *Arabidopsis thaliana*

<400> 28

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ctgtttcaag	attcagcact	agggtttcat	ggaagcaaaag	gcaaacgatc	taagecgatca	180
agatctgaat	tcgaccgtca	gagtctcacg	gaggatgaat	atatcgcttt	atgtctcatg	240
cttcttgc	gcgacggaga	tagaaaccgt	gaccttgacc	tgccttcttc	ttcgtctca	300
cctcctctgc	ttccctcctct	tcctactccg	atctacaagt	gtagegtctg	tgacaaggcg	360
ttttcgctt	accaggctct	tggtgacac	aaggcaagtc	accggaaaag	ctttcgtctt	420
actcaatctg	ccggaggaga	ttagctgtcg	acatcgctgg	cgataaccac	gtctggata	480
tcgggtggcg	ggggaggaga	tgtgaagtgc	cacgtttgtct	ctatctgtca	taaatcgttc	540
gccaccggtc	aagctctcg	cgccccaaaa	cggtgccact	acgaaggaaa	gaacggaggc	600
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ggccaccgtg	ggtttgacct	caacataccg	ccgataaccgg	aattctcgat	ggtcaacgga	720
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ccctaaacat	aaaccttagga	aaaactttac	agaattcatt	ttataggaaa	ttgttttact	840
gtatatacaa	atatcgattt	tgattgtatgt	tcttcttcac	tgaaaaattt	tgattcttt	900
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<210> 29

<211> 238

<212> PRT

<213> *Arabidopsis thaliana*

<400> 29

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20	25	30				

Arg Ser Lys Arg Ser Arg Ser Glu Phe Asp Arg Gln Ser Leu Thr Glu						
35	40	45				

Asp Glu Tyr Ile Ala Leu Cys Leu Met Leu Leu Ala Arg Asp Gly Asp						
50	55	60				

Arg Asn Arg Asp Leu Asp Leu Pro Ser Ser Ser Ser Pro Pro Leu						
65	70	75	80			

Leu Pro Pro Leu Pro Thr Pro Ile Tyr Lys Cys Ser Val Cys Asp Lys  
85 90 95

Ala Phe Ser Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His Arg  
100 105 110

Lys Ser Phe Ser Leu Thr Gln Ser Ala Gly Gly Asp Glu Leu Ser Thr  
115 120 125

Ser Ser Ala Ile Thr Thr Ser Gly Ile Ser Gly Gly Gly Ser  
130 135 140

Val Lys Ser His Val Cys Ser Ile Cys His Lys Ser Phe Ala Thr Gly  
145 150 155 160

Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Glu Gly Lys Asn Gly  
165 170 175

Gly Gly Val Ser Ser Ser Val Ser Asn Ser Glu Asp Val Gly Ser Thr  
180 185 190

Ser His Val Ser Ser Gly His Arg Gly Phe Asp Leu Asn Ile Pro Pro  
195 200 205

Ile Pro Glu Phe Ser Met Val Asn Gly Asp Glu Glu Val Met Ser Pro  
210 215 220

Met Pro Ala Lys Lys Leu Arg Phe Asp Phe Pro Glu Lys Pro  
225 230 235

<210> 30

<211> 718

<212> DNA

<213> Arabidopsis thaliana

<400> 30

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cgtacaaaac	gtcaccgtat	agatcaacca	aaccctcctc	cttctgaaga	agagtatctc	180
gctcttgcc	tccttatgct	cgctcggtgc	tcctccgatc	atcactctcc	accgtcgat	240
catcaactctc	tttctccact	gtccgatcat	cagaaagatt	acaagtgttc	cgtctgtggc	300
aaatcttcc	cgtcttacca	agcgttaggt	ggacacaaaa	caagtccaccg	gaaaccgggt	360
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ttagttggtc	aaagtggaa	gactcataac	tgctctatat	gttttaagtgc	gtttccctct	480
ggtaagcat	tgggtggtca	caaacgttgt	cactatgatg	gtggtaacgg	taacagtaac	540
ggtgacacata	gccacaaagt	tgacctaaat	ttacccgtg	atcaagttag	tgtatgagaca	600
attggaaaaaa	gtcaactctc	cggtgaagaa	acaaagtccg	tgttgtgatt	attattattt	660
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<210> 31

<211> 215

<212> PRT

<213> Arabidopsis thaliana

<400> 31

Met Ala Leu Asp Thr Leu Asn Ser Pro	Thr Ser Thr Thr Thr Thr		
1	5	10	15

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Leu Glu Ser Trp Thr Lys Arg Lys Arg Thr Lys Arg His Arg Ile Asp  
 35 40 45

Gln Pro Asn Pro Pro Ser Glu Glu Glu Tyr Leu Ala Leu Cys Leu  
 50 55 60

Leu Met Leu Ala Arg Gly Ser Ser Asp His His Ser Pro Pro Ser Asp  
 65 70 75 80

His His Ser Leu Ser Pro Leu Ser Asp His Gln Lys Asp Tyr Lys Cys  
 85 90 95

Ser Val Cys Gly Lys Ser Phe Pro Ser Tyr Gln Ala Leu Gly His  
 100 105 110

Lys Thr Ser His Arg Lys Pro Val Ser Val Asp Val Asn Asn Ser Asn  
 115 120 125

Gly Thr Val Thr Asn Asn Gly Asn Ile Ser Asn Gly Leu Val Gly Gln  
 130 135 140

Ser Gly Lys Thr His Asn Cys Ser Ile Cys Phe Lys Ser Phe Pro Ser  
 145 150 155 160

Gly Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Asp Gly Gly Asn  
 165 170 175

Gly Asn Ser Asn Gly Asp Asn Ser His Lys Phe Asp Leu Asn Leu Pro  
 180 185 190

Ala Asp Gln Val Ser Asp Glu Thr Ile Gly Lys Ser Gln Leu Ser Gly  
 195 200 205

Glu Glu Thr Lys Ser Val Leu  
 210 215

<210> 32

<211> 702

<212> DNA

<213> Arabidopsis thaliana

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cttcttgctc gggatggcg cgatcttgac tctgtgacgg ttgcggagaa gccgagttat						240
aagtgtggcg ttgtttacaa gacgttttcg tcttaccaag ctctcggcgg tcataaagcg						300
agccacccgga gtttatacgg tggtgagag aatgataaat cgacaccatc caccgcgtg						360
aaatctcacg ttgtttcggt ttgcggggaaa tctttcgca ccggtaacgc tctcggcgc						420
cacaaggcggt gccaactacgta tggtggcggt tcgaactcgg aagggtgtgg gtctactagc						480
cacgtcagca gtagtagcca ccgtggattt gacctaata ttataccggt gcagggattt						540
tcgccccgacg acgaagtgtat gagtcccgatg gcgactaaga agcctcgct gaagtaagtc						600
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<210> 33  
<211> 193  
<212> PRT  
<213> Arabidopsis thaliana

<400> 33  
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Arg Ser Arg Ser Asp Leu His His Asn His Arg Leu Thr Glu Glu Glu  
35 40 45  
Tyr Leu Ala Phe Cys Leu Met Leu Leu Ala Arg Asp Gly Gly Asp Leu  
50 55 60  
Asp Ser Val Thr Val Ala Glu Lys Pro Ser Tyr Lys Cys Gly Val Cys  
65 70 75 80  
Tyr Lys Thr Phe Ser Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser  
85 90 95  
His Arg Ser Leu Tyr Gly Gly Glu Asn Asp Lys Ser Thr Pro Ser  
100 105 110  
Thr Ala Val Lys Ser His Val Cys Ser Val Cys Gly Lys Ser Phe Ala  
115 120 125  
Thr Gly Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Asp Gly Gly  
130 135 140  
Val Ser Asn Ser Glu Gly Val Gly Ser Thr Ser His Val Ser Ser Ser  
145 150 155 160  
Ser His Arg Gly Phe Asp Leu Asn Ile Ile Pro Val Gln Gly Phe Ser  
165 170 175  
Pro Asp Asp Glu Val Met Ser Pro Met Ala Thr Lys Lys Pro Arg Leu  
180 185 190

Lys

<210> 34  
<211> 1157  
<212> DNA  
<213> Arabidopsis thaliana

<400> 34  
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acgaacaaaa cgtcaacggtt ttgatcacgg tcatcagaat caagaaacga acaagaacct 240  
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acaatctcct cctcttcctc ctctaccgtc acgtgcgtca ccgtccgatc accgagatta 360  
caagtgtacg gtctgtggga agtcttttc gtcataccaa gccttaggtg gacacaagac 420

gagtcaccgg aaaccgacga acactagtat cacttccggt aaccaagaac tgcataataa	480
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ggatcgata cgttattata tagtggacca ttctgtatc gtgaattatt attatttgtt	1140
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&lt;210&gt; 35

&lt;211&gt; 245

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis thaliana

&lt;400&gt; 35

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1	5	10	15

Pro Leu Leu Arg Tyr Arg Glu Glu Met Glu Pro Glu Asn Leu Glu Gln			
20	25	30	

Trp Ala Lys Arg Lys Arg Thr Lys Arg Gln Arg Phe Asp His Gly His			
35	40	45	

Gln Asn Gln Glu Thr Asn Lys Asn Leu Pro Ser Glu Glu Glu Tyr Leu			
50	55	60	

Ala Leu Cys Leu Leu Met Leu Ala Arg Gly Ser Ala Val Gln Ser Pro			
65	70	75	80

Pro Leu Pro Pro Leu Pro Ser Arg Ala Ser Pro Ser Asp His Arg Asp			
85	90	95	

Tyr Lys Cys Thr Val Cys Gly Lys Ser Phe Ser Ser Tyr Gln Ala Leu			
100	105	110	

Gly Gly His Lys Thr Ser His Arg Lys Pro Thr Asn Thr Ser Ile Thr			
115	120	125	

Ser Gly Asn Gln Glu Leu Ser Asn Asn Ser His Ser Asn Ser Gly Ser			
130	135	140	

Val Val Ile Asn Val Thr Val Asn Thr Gly Asn Gly Val Ser Gln Ser			
145	150	155	160

Gly Lys Ile His Thr Cys Ser Ile Cys Phe Lys Ser Phe Ala Ser Gly			
165	170	175	

Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Asp Gly Gly Asn Asn			
180	185	190	

Gly Asn Gly Asn Gly Ser Ser Asn Ser Val Glu Leu Val Ala Gly			
195	200	205	

Ser Asp Val Ser Asp Val Asp Asn Glu Arg Trp Ser Glu Glu Ser Ala  
210 215 220

Ile Gly Gly His Arg Gly Phe Asp Leu Asn Leu Pro Ala Asp Gln Val  
225 230 235 240

Ser Val Thr Thr Ser  
245

<210> 36

<211> 1213

<212> DNA

<213> Oryza sativa

<400> 36

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gggaggaggg	cgacacactg	ccccagggtt	gggcgaagcg	gaagcgggtcg	cgccgcgc	300
gatcggagga	ggagaacctc	cgctctgtt	tcctcatgt	cgccgcgggc	ggccaccacc	360
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gccacccgg	caagctgccc	actccgccc	cagctccgt	cttggctccc	gccccctcg	540
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gcaacggcca	gtccggccacc	cgggcggtcg	acctaaccct	cccgccgtg	ccggaggatcg	840
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<210> 37

<211> 269

<212> PRT

<213> Oryza sativa

<400> 37

Met Ser Ser Ala Ser Ser Met	Glu Ala Leu His	Ala Ala Val	Leu Lys
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20	25	30	

Ser Ser Ala Thr Ser Gly	Glu Glu Gly Gly His	Leu Pro Gln Gly Trp
35	40	45

Ala Lys Arg Lys Arg Ser	Arg Gln Arg Ser	Glu Glu Glu Asn Leu
50	55	60

Ala Leu Cys Leu Leu Met	Leu Ala Arg Gly Gly His	His Arg Val Gln
65	70	75

Ala Pro Pro Pro Leu Ser Ala Ser Ala Pro Pro Pro Ala Gly Ala Glu  
 85 90 95  
 Phe Lys Cys Ser Val Cys Gly Lys Ser Phe Ser Ser Tyr Gln Ala Leu  
 100 105 110  
 Gly Gly His Lys Thr Ser His Arg Val Lys Leu Pro Thr Pro Pro Ala  
 115 120 125  
 Ala Pro Val 'Leu Ala Pro Ala Pro Val Ala Ala Leu Leu Pro Ser Ala  
 130 135 140  
 Glu Asp Arg Glu Pro Ala Thr Ser Ser Thr Ala Ala Ser Ser Asp Gly  
 145 150 155 160  
 Met Thr Asn Arg Val His Arg Cys Ser Ile Cys Gln Lys Glu Phe Pro  
 165 170 175  
 Thr Gly Gln Ala Leu Gly Gly His Lys Arg Lys His Tyr Asp Gly Gly  
 180 185 190  
 Val Gly Ala Gly Ala Gly Ala Ser Ser Thr Glu Leu Leu Ala Thr Val  
 195 200 205  
 Ala Ala Glu Ser Glu Val Gly Ser Ser Gly Asn Gly Gln Ser Ala Thr  
 210 215 220  
 Arg Ala Phe Asp Leu Asn Leu Pro Ala Val Pro Glu Phe Val Trp Arg  
 225 230 235 240  
 Pro Cys Ser Lys Gly Lys Lys Met Trp Asp Glu Glu Glu Glu Val Gln  
 245 250 255  
 Ser Pro Leu Ala Phe Lys Lys Pro Arg Leu Leu Thr Ala  
 260 265  
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 <213> *Arabidopsis thaliana*  
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 agcaaaaacgca accataataa ccacttcgaa tgcaaaacgt gtaaccggaa atttgattt  
 ttccaaggttc ttggaggctca tagagctgc cacaagaaac ctaaagctgtat cggttgacc  
 gaacagggtga agcatcgtaa caaagagaat gatatgcata agtgtacaat ttgcgtatca  
 atgtttggga ccggtcaagc tctaggcggt cacatgagaa agcataggac gagcatgtat  
 accggacaat cgattgtccc ttctgtgggtt tattccagac cggttttaa tcgtttca  
 agcagcaagg agatcttggc cttaaatcta actccattgg aaaatgtatct tttgtttaa  
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 <210> 39  
 <211> 175  
 <212> PRT  
 <213> *Arabidopsis thaliana*

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Ile Val Glu Ser Leu Met Met Leu Ser Arg Ser Phe Val Val Lys Gln  
20 25 30  
  
Ile Asp Val Lys Gln Ser Thr Gly Ser Lys Thr Asn His Asn Asn His  
35 40 45  
  
Phe Glu Cys Lys Thr Cys Asn Arg Lys Phe Asp Ser Phe Gln Ala Leu  
50 55 60  
  
Gly Gly His Arg Ala Ser His Lys Lys Pro Lys Leu Ile Val Asp Gln  
65 70 75 80  
  
Glu Gln Val Lys His Arg Asn Lys Glu Asn Asp Met His Lys Cys Thr  
85 90 95  
  
Ile Cys Asp Gln Met Phe Gly Thr Gly Gln Ala Leu Gly Gly His Met  
100 105 110  
  
Arg Lys His Arg Thr Ser Met Ile Thr Glu Gln Ser Ile Val Pro Ser  
115 120 125  
  
Val Val Tyr Ser Arg Pro Val Phe Asn Arg Cys Ser Ser Ser Lys Glu  
130 135 140  
  
Ile Leu Asp Leu Asn Leu Thr Pro Leu Glu Asn Asp Leu Val Leu Ile  
145 150 155 160  
  
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165 170 175  
  
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<213> Saccharum officinarum  
  
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<211> 1509  
<212> DNA  
<213> *Arabidopsis thaliana*

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<210> 42  
<211> 383  
<212> PRT  
<213> *Arabidopsis thaliana*

<400> 42  
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Pro Phe His His Tyr Pro Asn Ser Ser Thr Asn Pro Ser Pro His Pro  
20 25 30

Leu Pro Pro Val Thr Pro Pro Ser Ser Phe Phe Phe Pro Gln Ser  
35 40 45

Gly Asp Leu Arg Arg Pro Pro Pro Pro Pro Thr Pro Pro Pro Ser Pro  
50 55 60

Pro Leu Arg Glu Ala Ala Pro Leu Leu Ser Leu Ser Pro Ala Asn Lys  
65 70 75 80

Gln Gln Asp His His His Asn His Asp His Leu Ile Gln Glu Pro Pro  
85 90 95

Ser Thr Ser Met Asp Val Asp Tyr Asp His His His Gln Asp Asp His  
100 105 110

His Asn Leu Asp Asp Asp Asp His Asp Val Thr Val Ala Leu His Ile  
115 120 125

Gly Leu Pro Ser Pro Ser Ala Gln Glu Met Ala Ser Leu Leu Met Met  
130 135 140

Ser Ser Ser Ser Ser Ser Arg Thr Thr His His His Glu Asp Met  
145 150 155 160

Asn His Lys Lys Asp Leu Asp His Glu Tyr Ser His Gly Ala Val Gly  
165 170 175

Gly Gly Glu Asp Asp Asp Glu Asp Ser Val Gly Gly Asp Gly Cys  
180 185 190

Arg Ile Ser Arg Leu Asn Lys Gly Gln Tyr Trp Ile Pro Thr Pro Ser  
195 200 205

Gln Ile Leu Ile Gly Pro Thr Gln Phe Ser Cys Pro Val Cys Phe Lys  
210 215 220

Thr Phe Asn Arg Tyr Asn Asn Met Gln Met His Met Trp Gly His Gly  
225 230 235 240

Ser Gln Tyr Arg Lys Gly Pro Glu Ser Leu Arg Gly Thr Gln Pro Thr  
245 250 255

Gly Met Leu Arg Leu Pro Cys Tyr Cys Cys Ala Pro Gly Cys Arg Asn  
260 265 270

Asn Ile Asp His Pro Arg Ala Lys Pro Leu Lys Asp Phe Arg Thr Leu  
275 280 285

Gln Thr His Tyr Lys Arg Lys His Gly Ile Lys Pro Phe Met Cys Arg  
290 295 300

Lys Cys Gly Lys Ala Phe Ala Val Arg Gly Asp Trp Arg Thr His Glu  
305 310 315 320

Lys Asn Cys Gly Lys Leu Trp Tyr Cys Ile Cys Gly Ser Asp Phe Lys  
325 330 335

His Lys Arg Ser Leu Lys Asp His Ile Lys Ala Phe Gly Asn Gly His

340

345

350

Gly Ala Tyr Gly Ile Asp Gly Phe Asp Glu Glu Asp Glu Pro Ala Ser  
355 360 365

Glu Val Glu Gln Leu Asp Asn Asp His Glu Ser Met Gln Ser Lys  
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<210> 43  
<211> 1303  
<212> DNA  
<213> *Arabidopsis thaliana*

<400> 43

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cacttcttc	tcttacattt	acaactctca	cggtagctac	tattactcta	ataccacaaa	240
cccttaatatt	attaatcata	ctcataccac	tttccactcc	cctaactcac	ccccactaag	300
agaagcttt	cctttcttta	gtttaaggccc	cataaggcac	caagaacaac	aagaccaaca	360
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gaatttgcga	aagctttgggt	attgtcttgc	tggctcgat	tttaagcaca	agagggtcgct	1020
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<210> 44  
<211> 337

<212> PRT  
<213> *Arabidopsis thaliana*

<400> 44

Met	Ser	Asn	Pro	Ala	Cys	Ser	Asn	Leu	Phe	Asn	Asn	Gly	Cys	Asp	His
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20 25 30

Gly Ser Tyr Tyr Ser Asn Thr Thr Asn Pro Asn Tyr Ile Asn His  
35 40 45

Thr His Thr Thr Ser Thr Ser Pro Asn Ser Pro Pro Pro Leu Arg Glu Ala  
50 55 60

Leu Pro Leu Leu Ser Leu Ser Pro Ile Arg His Gln Glu Gln Gln Asp  
65 70 75 80

Gln His Tyr Phe Met Asp Thr His Gln Ile Ser Ser Ser Asn Phe Leu  
85 90 95

Asp Asp Pro Leu Val Thr Val Asp Leu His Leu Gly Leu Pro Asn Tyr  
100 105 110

Gly Val Gly Glu Ser Ile Arg Ser Asn Ile Ala Pro Asp Ala Thr Thr  
115 120 125

Asp Glu Gln Asp Gln Asp His Asp Arg Gly Val Glu Val Thr Val Glu  
130 135 140

Ser His Leu Asp Asp Asp Asp His His Gly Asp Leu His Arg Gly  
145 150 155 160

His His Tyr Trp Ile Pro Thr Pro Ser Gln Ile Leu Ile Gly Pro Thr  
165 170 175

Gln Phe Thr Cys Pro Leu Cys Phe Lys Thr Phe Asn Arg Tyr Asn Asn  
180 185 190

Met Gln Met His Met Trp Gly His Gly Ser Gln Tyr Arg Lys Gly Pro  
195 200 205

Glu Ser Leu Arg Gly Thr Gln Pro Thr Gly Met Leu Arg Leu Pro Cys  
210 215 220

Phe Cys Cys Ala Pro Gly Cys Lys Asn Asn Ile Asp His Pro Arg Ala  
225 230 235 240

Lys Pro Leu Lys Asp Phe Arg Thr Leu Gln Thr His Tyr Lys Arg Lys  
245 250 255

His Gly Ser Lys Pro Phe Ala Cys Arg Met Cys Gly Lys Ala Phe Ala  
260 265 270

Val Lys Gly Asp Trp Arg Thr His Glu Lys Asn Cys Gly Lys Leu Trp  
275 280 285

Tyr Cys Ser Cys Gly Ser Asp Phe Lys His Lys Arg Ser Leu Lys Asp  
290 295 300

His Val Lys Ala Phe Gly Asn Gly His Val Pro Cys Gly Ile Asp Ser  
305 310 315 320

Phe Gly Gly Asp His Glu Asp Tyr Tyr Asp Ala Ala Ser Asp Ile Glu  
325 330 335

## Gln

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<211> 495  
<212> DNA  
<213> Arabidopsis thaliana

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acttgtctta	aagagtttc	gtcgttcaa	gctttggag	gtcatcg	tgc	aagccacaag	180
aaactcatta	acatggcg	tccatca	cttgatcct	tgtctaacaa	aaaaactaaa		240
acggcgacgt	ctcatcctt	tccgatatgt	ggcgtggagt	ttccgatggg	gcaagctt		300
ggtgttcaca	tgaggagaca	taggagttag	aaagcctcac	caggcacgtt	ggttacacgt		360
tctttttac	cgagacgac	gacggtgacg	actttaaaaa	aatcgagtag	tggaaagaga		420
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agaacgattt	cttga						495

<210> 46  
<211> 164  
<212> PRT  
<213> Arabidopsis thaliana

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Glu Lys Arg Val Phe Arg Cys Lys Thr Cys Leu Lys Glu Phe Ser Ser  
35 40 45

Phe Gln Ala Leu Gly Gly His Arg Ala Ser His Lys Lys Leu Ile Asn  
50 55 60

Ser Ser Asp Pro Ser Leu Leu Gly Ser Leu Ser Asn Lys Lys Thr Lys  
65 70 75 80

Thr Ala Thr Ser His Pro Cys Pro Ile Cys Gly Val Glu Phe Pro Met  
85 90 95

Gly Gln Ala Leu Gly Gly His Met Arg Arg His Arg Ser Glu Lys Ala  
100 105 110

Ser Pro Gly Thr Leu Val Thr Arg Ser Phe Leu Pro Glu Thr Thr Thr  
115 120 125

Val Thr Thr Leu Lys Lys Ser Ser Ser Gly Lys Arg Val Ala Cys Leu  
130 135 140

Asp Leu Asp Ser Met Glu Ser Leu Val Asn Trp Lys Leu Glu Leu Gly  
145 150 155 160

Arg Thr Ile Ser

<210> 47  
<211> 1209  
<212> DNA  
<213> Arabidopsis thaliana

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tactatggtc taaggaaaaa ctcgaagaag aaaacccagg aatctccgga accaatgaag 180  
aagattttgt ttcatgcgaa agaatgtgga aaagggttgc 240

aatcatcgct	cgatgatgca	tttgcgcgg	aacgagaagg	tttgtgaaga	atccgttat	300
actctgtctc	gtagccttg	gtttgtgaag	aagaagaaaa	gatcaagact	tggtaggtct	360
ggaaagactt	tatttactac	gtttcttcaa	ccgagttcta	tttttgcata	gactgtgaa	420
gaatttgaag	tggcgattt	tttgattcta	ttgtcttaaga	gtgtcccaa	ggttgttagac	480
gaatttggaaa	gtctttctga	ggcagtacgt	tttactccgt	aaacacctga	aagttagctat	540
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ttaagtaatg	agcaaagact	tatggaaagaa	gggttttagta	tttatggaaac	atcgaagaa	660
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&lt;210&gt; 48

&lt;211&gt; 402

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis thaliana

&lt;400&gt; 48

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Arg	Asp	Leu	Lys	Ile	Thr	Arg	Ser	Gln	Lys	Glu	Thr	Glu	Lys	Ser	Thr
						20			25				30		

Asn	Gln	Gln	Gln	Asp	Val	Thr	Cys	Tyr	Tyr	Gly	Leu	Arg	Glu	Asn	Ser
						35		40			45				

Lys	Lys	Lys	Thr	Gln	Glu	Ser	Pro	Glu	Pro	Met	Lys	Lys	Ile	Leu	Phe
						50		55		60					

Arg	Cys	Glu	Glu	Cys	Gly	Lys	Gly	Phe	Arg	Tyr	Glu	Lys	Tyr	Phe	Lys
						65		70		75		80			

Asn	His	Arg	Ser	Met	Met	His	Leu	Ser	Pro	Asn	Glu	Lys	Val	Cys	Glu
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Glu	Ser	Leu	Met	Thr	Leu	Ser	Arg	Ser	Leu	Gly	Phe	Val	Lys	Lys	Lys
						100			105			110			

Lys	Arg	Ser	Arg	Leu	Gly	Arg	Ser	Gly	Lys	Thr	Leu	Phe	Thr	Thr	Phe
						115			120		125				

Leu	Glu	Pro	Ser	Ser	Ile	Phe	Asp	Ala	Thr	Asp	Glu	Glu	Leu	Val	
						130		135		140					

Ala	Asp	Cys	Leu	Ile	Leu	Leu	Ser	Lys	Ser	Ala	Pro	Lys	Val	Val	Asp
							145		150		155		160		

Glu	Leu	Lys	Ser	Leu	Ser	Glu	Ala	Val	Arg	Val	Thr	Pro	Glu	Thr	Pro
						165			170			175			

Glu	Ser	Ser	Tyr	Asp	Leu	Gly	Cys	Leu	Leu	Asn	Lys	Lys	Pro	Arg	Lys
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

180	185	190	
Gly Gly Glu Leu Glu Ser Gly Val Leu Ser Asn Glu Gln Arg Leu Met			
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Glu Glu Gly Phe Ser Ser Tyr Gly Thr Ser Lys Glu Pro Ala Ser Phe			
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225	230	235	240
Glu Phe Glu Ser Gly Leu Leu Ser Asn Glu Gln Arg Leu Leu Glu Glu			
245	250	255	
Glu Ile Thr Thr Pro Val Thr Phe Lys Gly Pro Ala Ser Ser Leu Arg			
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His Lys Cys Ala Leu Asp Arg Asn Gly Gly Glu Phe Gly Pro Glu Phe			
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Leu Ser Asn Glu Gln Thr Leu Met Glu Glu Thr Trp Lys Glu Pro Val			
290	295	300	
Ser Phe Leu Glu Asp Lys His Glu Phe Asp Gln Arg Lys Met Arg Glu			
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Ala Gly Asp Phe Glu Ser Arg Phe Tyr Arg Ile Glu Leu Gly Val Gly			
325	330	335	
Ala Met Glu Cys Thr Ser Ser Asp Thr Asp Met Leu Thr Gln Ser Asp			
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Lys Lys Asn Val Glu His Arg Cys Arg Leu Cys Asn Lys Ile Phe Ser			
355	360	365	
Ser Tyr Gln Ala Leu Gly Gly His Gln Thr Phe His Arg Met Ser Lys			
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Thr Leu			

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gcgacaacacg	tgacttcaac	aagttcatcg	ggccgtggaa	gtggaggaga	aagactgttt			300
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gaagacatgg	cgatttgct	catcatgtta	gctcggtggaa	cagttcttcc	atcgccggat			420
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cccaagtcta	gtgcatcaga	agaagggcaa	aacagtctt	tcaaaatgttc	cggctcagcc	660
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gccgttaacca	cgattagccc	cgttgcagcc	accgcagaag	taaggcagaaa	cagtacagag	840
gaagagattg	agatccaatat	aggccgttgc	atggaaacagc	agaggaaata	tctaccgttg	900
gatcttaatc	taccagcacc	aggagatgtat	ctaagagagt	ccaatgttca	aggatagata	960
ttctcagcaa	caccagcgtt	aatagattgt	cattactagt	tgtttttttt	actacataaa	1020
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 35 40 45  
 Glu Arg Ala Val Ser Asp Glu Tyr Asn Ser Ala Val Ser Ser Pro Val  
 50 55 60  
 Thr Thr Asp Cys Thr Gln Glu Glu Asp Met Ala Ile Cys Leu Ile  
 65 70 75 80  
 Met Leu Ala Arg Gly Thr Val Leu Pro Ser Pro Asp Leu Lys Asn Ser  
 85 90 95  
 Arg Lys Ile His Gln Lys Ile Ser Ser Glu Asn Ser Ser Phe Tyr Val  
 100 105 110  
 Tyr Glu Cys Lys Thr Cys Asn Arg Thr Phe Ser Ser Phe Gln Ala Leu  
 115 120 125  
 Gly Gly His Arg Ala Ser His Lys Lys Pro Arg Thr Ser Thr Glu Glu  
 130 135 140  
 Lys Thr Arg Leu Pro Leu Thr Gln Pro Lys Ser Ser Ala Ser Glu Glu  
 145 150 155 160  
 Gly Gln Asn Ser His Phe Lys Val Ser Gly Ser Ala Leu Ala Ser Gln  
 165 170 175  
 Ala Ser Asn Ile Ile Asn Lys Ala Asn Lys Val His Glu Cys Ser Ile  
 180 185 190  
 Cys Gly Ser Glu Phe Thr Ser Gly Gln Ala Leu Gly Gly His Met Arg  
 195 200 205  
 Arg His Arg Thr Ala Val Thr Thr Ile Ser Pro Val Ala Ala Thr Ala

210

215

220

Glu Val Ser Arg Asn Ser Thr Glu Glu Glu Ile Glu Ile Asn Ile Gly  
225 230 235 240

Arg Ser Met Glu Gln Gln Arg Lys Tyr Leu Pro Leu Asp Leu Asn Leu  
245 250 255

Pro Ala Pro Gly Asp Asp Leu Arg Glu Ser Lys Phe Gln Gly Ile Val  
260 265 270

Phe Ser Ala Thr Pro Ala Leu Ile Asp Cys His Tyr  
275 280